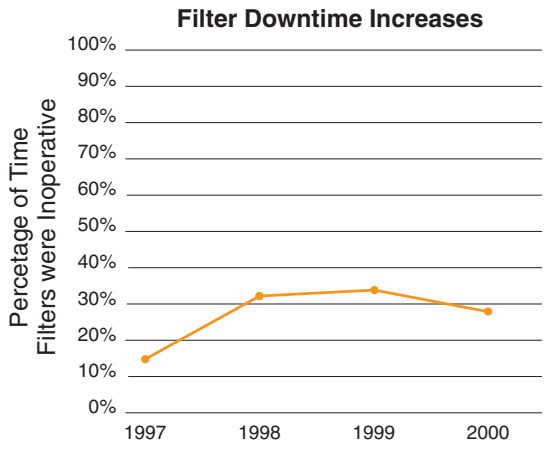
Challenges and Solutions

MWW's goal is to maintain this high level of customer service and continue to provide the people of Manchester and the surrounding communities with reliable, high quality drinking water at the lowest possible rates. However, for several reasons, the Lake Massabesic plant now must be repaired, upgraded, and expanded:

- *Aging mechanical equipment is beginning to fail. This situation threatens the loss of water supply to 140,000 customers and causes excessive maintenance costs.*
- *Demand for water is increasing. The current capacity of the plant is 30 million gallons per day (MGD).*



One or more of the old carbon filters at the Massabesic plant is inoperative a high percentage of the time. Between 1997 and 1999, that percentage doubled.

The maximum day demand during each of the past three years has exceeded that amount, and consumption is expected to increase to 39.9 MGD by 2020.

- *Recently enacted U.S. EPA drinking water regulations will require higher and more stringent levels of water purification.*

A recent engineering review of the 27-year-old Lake Massabesic facility recommended that the MWW immediately replace the plant's filters, expand the capacity to meet the water demand anticipated by 2010, and improve the treatment process. The review also recommended that, in the long run, the Merrimack River be used as a water source to meet the additional demand anticipated in future years.

Treatment Process

Current Process

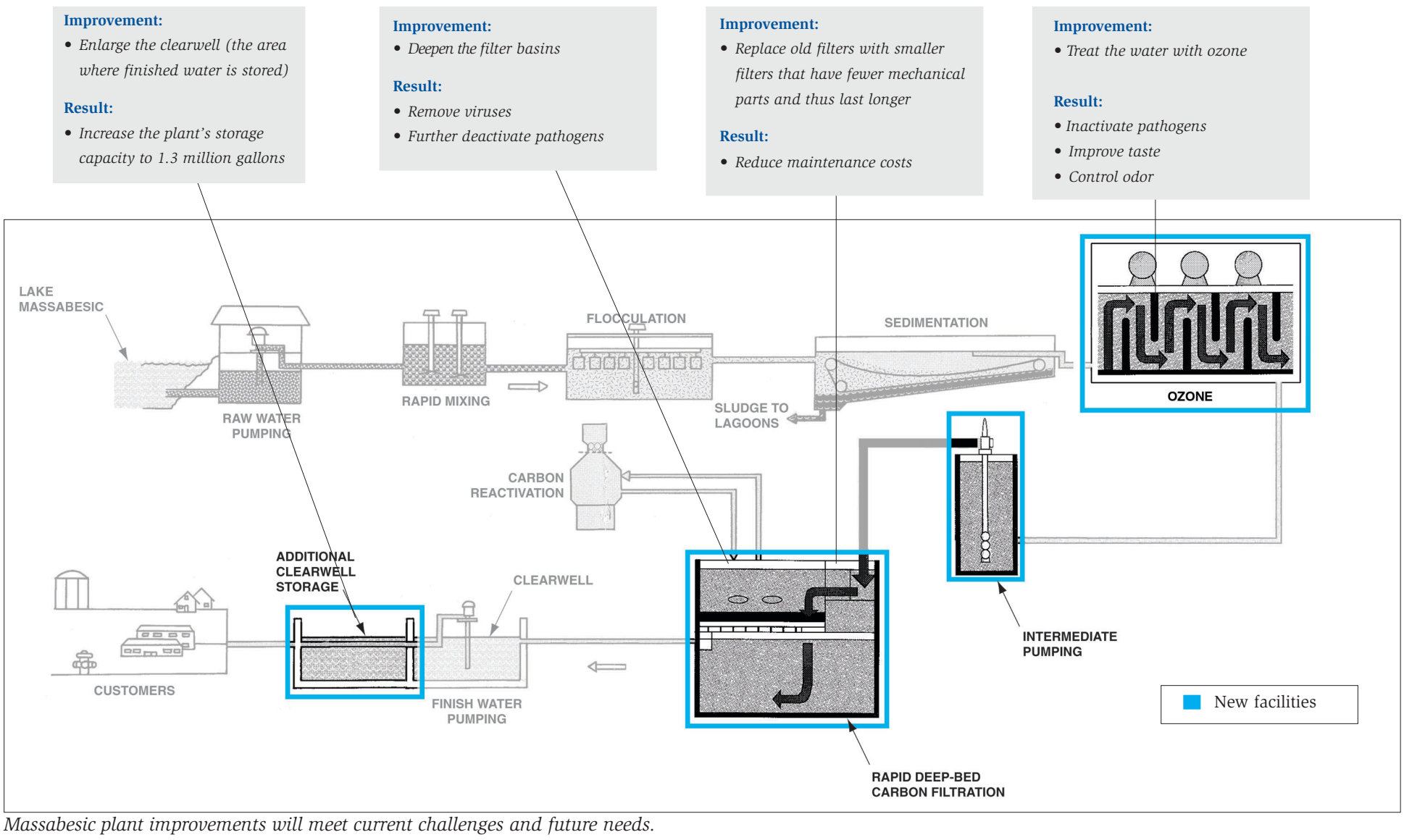
At the Lake Massabesic plant, water moves through a succession of steps in the treatment process. Untreated water (raw water) is pumped from the lake and then mixed rapidly with chemicals to cause suspended particles in the water to clump together (flocculation) with the solid particles settling out (sedimentation). Then the water passes through sand filters and carbon filters, which remove additional particles, pathogens, and other contaminants. Chlorine is added, and then the treated water (finished water) is stored in a clearwell before being pumped to homes and businesses.

Improved Process

This process will be improved in three ways over the next few years. Before being filtered, the water will be treated with ozone, to remove turbidity (cloudiness), target more resilient pathogens, enhance taste, and reduce odors. The old sand and carbon filters will be replaced with a new type of carbon filter that requires less maintenance. The new filter basin will be made deeper so the filtration process will do a better job of removing particles and disinfecting pathogens. Lastly, the clearwell will be enlarged, to optimize process flows and pumping.

Schedule

These improvements are now being designed. The construction contract will be awarded in early 2003, and the project will take about three years to complete. The construction activities will not interrupt your water service or interfere with the exisiting treatment process. MWW customers will continue to receive the reliable service and high quality that you have come to expect from MWW.



Massabesic plant improvements will meet current challenges and future needs.

Did You Know?

Your water rates have not increased in over 11 years.

MWW water rates are among the lowest in the state:

- NH typical household: $279/yr.
- MWW typical household: $167/yr.
- MWW (future) per household: $227+/-/yr.

Changes to Your Water Rates

The MWW will borrow nearly $36.0 million to finance these improvements. The repayment of the bond requires that a financial plan must be put into place that clearly defines our ability to meet our financial obligation. The Board of Water Commissioners and the MWW staff are developing a plan that will minimize the rate impact of the project on our customers. Our goal is to phase in, over a two- to-three year period beginning in early 2003, the estimated $50.00 to $60.00 increase from an average residential water bill of $167.00 per year to approximately $227.00 per year (i.e. an overall 35% rate increase). The exact amount of the increase, which will be the first MWW rate increase since 1989, will not be known until the construction contracts are awarded and the bond rate has been established. In the meantime, the MWW continues to take steps to ensure the cost effectiveness of the project by obtaining a low interest state loan for the engineering phase of the project, working with the New Hampshire congressional delegation in obtaining a $1.0 million grant, and conducting two value engineering reviews of the design, which successfully reduced the overall project cost by several million dollars.

When the upgrade is complete in 2005, MWW customers will be assured that their drinking water will be treated to the highest of quality standards, that the water treatment plant will be reliable and incorporate the latest in treatment technology, and that your water rates will still be nearly the lowest in the region.